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Alcoholism

Earlier Diagnosis and Definition of the Problem

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There are important measurements of alcoholism that are poorly understood by physicians. Professional attitudes toward alcoholic patients are often counterproductive. Americans spend about $30 billion on alcohol a year and most adults drink alcohol. Even though traditional criteria allow for recognition of the disease, diagnosis is often made late in the natural course, when intervention fails. Alcoholism is a major health problem and accounts for 10 percent of total health care costs. Still, this country's 10 million adult alcoholics come from a pool of heavy drinkers with well defined demographic characteristics. These social, cultural and familial traits, along with subtle signs of addiction, allow for earlier diagnosis. Although these factors alone do not establish a diagnosis of alcoholism, they should alert a physician that significant disease may be imminent. Focus must be directed to these aspects of alcoholism if containment of the problem is expected.

ALTHOUGH THE medical complications of alcoholism are familiar to most practicing physicians, there remain aspects of the disorder that are poorly understood by the profession. This understanding is critical if containment is a goal. The prevalence of alcoholism, its influence on mortality rates and its economic impact are startling but they generate little medical interest. Despite the development of diagnostic criteria, the disorder is often identified late in the natural course when end-stage disease allows little therapeutic intervention. Still there are clues to the earlier diagnosis of alcoholism in demographic information, in well-documented social, cultural and familial characteristics, and in early signs of addiction. Unfortunately these data are infrequently utilized and reflect physician attitudes toward alcoholism that are often counterproductive.

If the medical profession is to deal with alcoholism effectively it must consider the diagnosis in the early stages of habituation. The physician force must focus on earlier clues. It must search for social, familial and cultural attitudes that support the diagnosis, and ask questions which

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will uncover the early historical danger signals of alcoholism. Finally, a change in physician attitudes toward this treatable disease is required through an understanding of the disorder and avoidance of a pejorative approach.

Attitudes Toward Alcoholism

Alcoholism has not traditionally been a venerable disease state. In the second edition of his *Modern Practice of Physic,* in 1762, John Ball summarized alcohol-related disorders in a single paragraph from a chapter entitled, "Of Madness and Melancholy."[1] More than 100 years later William Osler included a short discussion on alcoholism in the chapter "Intoxications, Sunstroke and Obesity" in his newly published *Practice of Medicine.*[2]

Riley and Marden interviewed a large group of general practitioners in 1945 to find that while most treated alcoholic patients, almost all felt that they afforded their patients little more than temporary relief.[3] Similar attitudes were identified among Jackson, Mississippi, physicians several years later.[4] Typically, these physicians regarded alcoholic patients as "lacking motivation toward health," "unwilling to assume responsibility" and "depriving other patients of care by consuming therapist time."

Professional attitudes have changed little to the present. Recently MacDonald and Patel, in reviewing attitudes in Scottish hospitals, found that among all of the organic and psychiatric illness, physicians least liked to treat alcoholism.[5] This attitude appears to be well established early in professional life. It has been reported that graduating physicians are more cynical and less humanitarian than when they entered medical school and that, among first-year and second-year medical students, interns and residents, feelings toward alcoholic patients deteriorate directly with time.[6,7]

Physician attitudes toward alcoholics have complicated origins. Notable discussants stress the profession's innate attitudes of independence, autonomy, self-control and self-reliance, reflections of middle class puritan ethics, to explain intolerance toward management of alcoholic patients. Lisansky points to both conscious and subconscious concepts which act as deterrents to physicians in their therapeutic attempts.[8] Among them he includes: lack of knowledge about alcoholism; confusion with its "disease" status; anger at the alcoholic who is felt to be willful, uncooperative and unmodifiable; bad family experiences with alcoholics; the fear of losing a patient who is informed of his alcoholic status; and misgivings about one's own drinking patterns.

Robert Sparks, while corroborating Lisansky's observations, adds lay misconceptions as a force adversely affecting physician attitudes; that is, the belief that a single factor is responsible for alcoholism; the reluctance to admit that a close friend or relative has a drinking problem; one's own inability to control his drinking; the stereotypic alcoholic as the skid row resident; the persistent social pressure for everyone to drink; the ever present tendency to admire the person who can "hold his liquor" and who is the "life of the party," and the constant depiction by advertising media of alcohol drinking as a sign of appropriate sophistication.[9]

Lastly, medical school curricula have devoted almost no time to alcoholism. This lack of focus on the problem tacitly condones the absence of understanding, interest and involvement and allows the unknowledgeable physician to be a target for the disease.

Magnitude of the Alcoholism Problem

Unfortunately, alcoholism represents one of the nation's most serious public health problems. Alcohol overuse generates cost to society within several contexts: lost production, health care, motor vehicle accidents, fire, crime, and certain social programs created to defend against alcohol abuse (highway safety, fire protection, criminal justice and the like).[10]

In 1950 Americans were spending $8 billion a year on alcohol. Government agencies collected $3.2 billion in alcohol taxes, but allocated virtually nothing to anti-alcoholism programs.[11] By 1976 some $30 billion was spent on alcohol and $9 billion collected in taxes.[11] Overall, the federal government allocates approximately 6¢ to alcohol programs for every dollar it receives in revenue. In addition, the alcohol industry represents a major power in this country's economic structure. While total annual subsidy for federal alcohol program spending is just over $300 million, the same amount is allocated annually by the liquor industry for advertising. The advertising media have been very successful over the past 20 years. The per capita consumption of beer has increased by 22 percent, of hard liquor by 56 percent and of wine by 80 percent.[11] A total of 71 percent of adult Americans drink alcoholic beverages, the largest percentage ever.[12] The *Second Special*

Report to Congress on Alcohol and Health showed that average per capita annual alcohol consumption is 2.63 gallons of absolute alcohol (2.16 gallons of wine, 2.60 gallons of distilled spirits and 26.6 gallons of beer).[13]

According to the figures developed under the auspices of the National Institute on Alcohol Abuse and Alcoholism, the total cost of alcohol abuse in the United States in 1971 was approximately $31.4 billion. With current inflationary trends, that represents a figure of $43.4 billion.[10] Health care costs attributable to alcohol overuse in 1971 were estimated at approximately 10 percent of total health care costs.[10] Of these expenses, most are allocated to direct hospital care. The enormous impact of alcoholism is reflected in data on patients admitted to hospital.

Alcohol abuse is an important reason for hospital admission and a major contributor to mortality in our hospitals. A review of the records of 200 most recently discharged patients from the medical service of the Portland Veterans Administration and University Hospital of the University of Oregon Health Sciences Center has shown alcoholism to be a definable medical problem in 26 percent and 20 percent of all patients, respectively. Of these cases of alcoholism, 75 percent fulfilled classic criteria of the National Council on Alcoholism. Of the alcoholic patients in the review, more than half from each hospital had been admitted as a direct result of alcohol abuse. Further, alcoholism or its sequelae complicated the hospital courses in almost a third of these cases. One of every five of the patients died in the hospital. Arrangements for follow-up for alcoholism were made for only 5 percent of the survivors.

Death rates from alcohol abuse in age groups at major risk are more than twice those for the general population. While more consistent data have been recovered from studies of persons admitted to hospitals for alcohol treatment, two problems inherent in these studies have made them inaccurate. A large segment of the alcoholic population is not included and the sickest patients are preferentially admitted to hospital.[13] Still in a Swedish study where all persons reported for drinking problems were included whether admitted to hospital or not, mortality rates were 20 percent higher than in the general population for all age groups.[14]

Identifying Heavy Drinkers

Roughly 10 million adults in this country are alcoholic.[15,16] Of the adult population who consume alcohol, about 18 percent (20 percent of men and 8 percent of women) drink heavily; that is, almost daily and in sufficient quantities to be intoxicated several times a month. It is from this pool of heavy drinkers that the alcoholic population emerges.[16]

Because the alcoholic population evolves from heavy and problem drinkers, identifying characteristics of these groups is important. Demographic information supplies such data. Inhabitants of the South-Central United States consume the least alcohol, while those in New England and the Pacific regions consume the most.[13] More than 70 percent of the American adult population drink alcohol, and progressively younger age groups are involved. Between 71 and 92 percent of high school youths have at least tried alcohol and 14 percent of male high school seniors overdose with alcohol at least once a week.[11,17,18] Young men (18 to 20 years old and 35 to 39 years old) and young women (21 to 29 years old) consume the highest proportions of alcohol.[13] Alcohol consumption is lowest among groups whose cultural demands discourage or contraindicate alcohol overuse. For example, Jews and Italian-Americans are at small risk, while Irish-Americans and American Indians are at great risk. Although religious affiliation no longer strongly influences alcohol consumption, Catholics and liberal Protestants average highest alcohol intake and conservative Protestants and Jews the least. The highest percentage of abstainers comes from the least educated groups and the greatest proportion of heavy drinkers from groups with graduate educations. Likewise, more persons from low socioeconomic status are abstainers, and drinking practices increase with social status. Paradoxically, drinking problems seem to evolve more frequently per person at risk from lower socioeconomic populations. Heavy alcohol consumption is greatest among separated, then divorced and then single persons, and least among married persons. Farm owners have the lowest number of alcohol problems among persons with occupations, while professionals and businessmen have high rates, and semiprofessionals the highest. Both military officers and enlisted men drink more than their civilian peers. Although place of residence plays a less important role than it has traditionally,

persons in urban populations, especially those entering from rural areas, are heavier drinkers. Contexts of drinking may also represent a risk factor. Drinking alone and drinking in bars and taverns, especially alone, result in heavier drinking practices.

If these demographic data are compiled, a stereotypic person at high risk for alcoholism emerges: A young man or woman arising out of socioeconomic depression, educated, professional or semiprofessional, recently separated, who has moved from rural to urban residence and who is an Irish-American Catholic or liberal Protestant, and who is in the military service and resides on the east or west coast. Such a person does not match preconceptions by lay persons of the average alcoholic, the skid row resident.

Social attitudes are important in predisposition to heavy drinking and alcoholism, and many reflect the plentiful use of denial. Cahalan found significant, heavy drinking and alcoholism among persons who answered favorably questions reflecting the social utility of alcohol drinking, and who enjoyed "getting drunk once in a while," and who felt that "drinking is not harmful."[18] Other investigators have shown that heavy drinkers and alcoholics are, in general, not knowledgeable about the effects of alcohol and are unwilling to acknowledge that alcohol is a drug.

Physicians, unfortunately, are at high risk for alcoholism.[19-21] Blachly reported that drugs or alcohol abuse were important factors in 40 percent of violent deaths of physicians between May 1965 and November 1967.[22] From 1961 through 1972, in Oregon, 2.3 percent of physicians were brought before disciplinary boards for alcoholism.[23] Glatt reported the incidence of alcoholic cirrhosis from England's Registrar General's Office in physicians to be 3.5 times that in the general population.[24] Between 3 and 4 percent of alcoholic patients at two large English alcoholic units were physicians, a rate considerably higher than expected.[25] Murray, in a review of data from the Scottish hospitals and Research Intelligence Unit, reported that the incidence of alcoholism for which hospital admission was required was 2.7 times higher for male physicians than social and economic equals.[26] In addition, alcoholism accounted for more than half of all psychiatric hospital admissions for physicians between ages 45 and 54 during the ten-year period studied.

The characteristics of alcoholic physicians are interesting. Bissel and Jones recently compiled data on 98 recovered alcoholic physicians.[27] Psychiatry was the only specialty that had a prevalence greater than expected. A larger than anticipated percentage reported high standing in medical school classes. All but 22 patients had sought professional help, yet more than a third were told by therapists that alcoholism was not the problem. The social and professional sequelae experienced by this group are of interest. More than half reported no obvious change in work status or only admonishment by colleagues. Some 20 percent were warned by a medical society or a licensing board, and a similar number lost hospital privileges. Only 10 percent lost their medical licenses, and a third were not sanctioned at all.

Finally, the question of the role of hereditary and genetic risk factors for alcoholism has been the subject of continuing debate since Ann Roe's report in 1945.[28] In that study she maintained that environmental experience was the only appreciable influence on the development of alcoholism (the nurture hypothesis). Her conclusion was based on the fact that in children of alcoholic parents, removed from their homes at early ages, there developed no appreciable incidence of alcoholism in adulthood. However, the Danish-American studies by Goodwin, Guze and Winokun showed striking genetic predisposition.[15,29] Goodwin designed this study because it allowed utilization of a unique Danish record-keeping system that included a known pool of 15,000 adoptees, separated from biologic parents and raised by nonrelatives. In all, 55 persons were interviewed. All had one biologic parent who had been admitted to hospital for alcoholism and each had been removed from his parents during the first six weeks of life to be raised by nonrelatives. There was no subsequent contact with parents. Similarly, an age-matched control group without alcohol history was studied. The incidence of alcoholism in the offspring with an alcoholic parent was four times that in the other group, and there was no evidence of underlying psychiatric disorder. Subsequent studies showed that the incidence of alcoholism was just as great whether raised by natural parents or not, as long as there was one alcoholic parent (the nature hypothesis).[30]

Last, the influence of familial risk factors on alcoholism has been strengthened by other notable investigations.[31-35] The work of Amark and Winokur showed increased rates of alcoholism among

first-degree family members of alcoholics. The twin studies of Kaij showed similar patterns of alcohol consumption between alcoholic twins and their siblings. The separation studies with half siblings of alcoholics of Shuckit, Goodwin and Winokur showed a correlation between having an alcoholic biologic parent and being an alcoholic. The more recent observations of Winokur showed that alcoholism occurs statistically more frequently among men in families whose women members have high incidences of hereditary recurrent depression.

Toward the Earlier Diagnosis of Alcoholism

In 1945 Jellinek succeeded in developing historical criteria for the diagnosis of alcoholism.[36] Though imperfect and based on a confusing data base, they provided a diagnostic framework not previously available. The National Council on Alcoholism recently published more comprehensive and accurately derived criteria which included three diagnostic levels: classic, providing definite diagnosis; probable, suggesting the diagnosis; and potential, allowing for it.[37] They were developed from physiologic, clinical and behavioral characteristics of alcoholics. In addition, other investigators have focused on early clues, some of which are included by the National Council.[38-41] None of these clues makes a diagnosis of alcoholism certain. Yet each is a warning sign—a danger signal that alcoholism may be operative. In general these clues are historical, and manifestations of four conditions of alcohol addiction: loss of control, craving, tolerance and physical dependence.

Loss of control reflects one's inability to regulate alcohol intake. It may not be detectable in any but the person's own environment, and forces an individual to seek innovative opportunities for drinking; only some of which may be inappropriate. He begins to drink alcohol in the same pattern whether it is a work day, weekend or holiday. The more advanced the stage, the more stereotypic the pattern. Loss of control over consumption makes automobile accidents more likely, forces the person to change employment to jobs that make drinking easier to continue and makes him repeatedly attempt abstinence.

Craving alcohol reflects the subjective compulsion to drink. The patient understands drink-seeking behavior and gives priority to maintaining alcohol intake. He begins to shift from one alcoholic beverage to another. Unpleasant consequences with spouse, family members and associates no longer prevent drinking. Frequently unexplained changes develop in these relationships. Complaints about spouse, family and associates emerge. Medical excuses from work become frequent. Activities which are not directly associated with drinking are no longer of interest.

Tolerance allows the early alcoholic to function at alcohol levels that would incapacitate nondrinkers. It represents a relative resistance at a neuronal level to the effects of a given amount of alcohol. The alcohol-tolerant persons begins to show less effect per amount of alcohol consumed. He becomes "able to hold his liquor." He finds that "one or two drinks no longer work." Cross tolerance to other drugs develops, and less effects are noted from sleeping tablets and tranquilizers.[42]

Physical dependence, most notable in the classic alcohol withdrawal syndrome, is also operational in the early course of the disease during periods of abstinence. Withdrawal symptoms are initially intermittent, mild and cause little disability. However, in the background are 200 to 300 grams of daily alcohol consumption for many years, and considerable tolerance must have developed.[38] The spectrum of withdrawal symptoms is vast and several deserve mention. Tremor may initially be recognized as unsteadiness in drinking morning coffee or finding it necessary to change to an electric razor. Nausea, especially prevalent in the early morning after the most prolonged period of abstinence, is also frequent. It is commonly associated with vomiting, a reason many sufferers avoid breakfast. Sweating, occurring at night, is often noted as "nighttime clamminess" or "drenching soaks" which necessitate changing the bed clothes. Feelings of anxiety, impending doom or agitation may be noted. Early morning drinking quickly relieves these symptoms, at first.

Questions of intake deserve more comment. As previously noted, both timing and quantity are significant. However, as critical as the question itself is the manner in which it is answered. Weinburg has written that recognition of a patient's use of denial in answering may be of more diagnostic importance than a positive answer.[39] Early on, denial is used by the patient to avoid the reality of the issue, when a degree of dependence has already been established. Consequently, answers to consumption questions that are qualified in any manner become important. For instance, responses like "I drink, but only

beer" or "I drink, but never pass out," should be early clues to the presence of a potential problem. Denial is also reflected in attitudes reviewed earlier, but deserves reemphasis. Comments like "alcoholism is not a problem" or "drinking doesn't do anyone harm" should also make the interviewer alert to the possible presence of alcoholism. It is from the historical data base that important clues toward the earlier diagnosis of alcoholism can be developed. This history is difficult to pursue, requires in-depth understanding, patience and time, and mandates that the interviewer's attitude encourage communication about alcohol.[43,44]

This discussion has purposefully avoided the importance of physical examination or laboratory data. As a rule, there are only few early indicators of alcoholism in these data.[37,38] Tremor, mentioned previously, is occasionally present, appears after longest periods of abstinence and often requires close observation to document. Flushed facies is also an early sign. Two important findings, infrequently referred to, are tachycardia and hypertension, otherwise unexplained. These features assume more importance if they disappear after long periods of abstinence.

The odor of alcohol on a person's breath at the time of medical appointment is very indicative and a blood alcohol level of 100 mg per dl at that time is diagnostic of alcoholism.[37] Laboratory data which primarily reflect the pathophysiologic interference of normal metabolic pathways by alcohol provide some clues.[45-49] Therefore, hypoglycemia, hypophosphatemia, hypochloremic alkalosis, lactic acidosis, hyperuricemia, hypokalemia and hypertriglyceridemia may be present. Some investigators have supported macrocytosis alone as a very suggestive indicator of early alcoholism. Others have discussed the role of gammaglutamyl transpeptidase as an early sensitive finding.[50,51] At this time, these and other abnormal physical and laboratory information support the diagnosis. By themselves they do not establish the diagnosis. Neither does their absence rule it out.

Conclusion

If the availability of alcohol cannot be contained, the problem of alcoholism will likely remain in our society. To lessen its socioeconomic shock, prevention or earlier successful treatment must be realized. The latter goal demands earlier diagnosis, but either goal requires identification of persons at risk and recognition of early danger signals. Since the population of alcoholics is generated from a larger mass of problem drinkers and heavy alcohol consumers, information which describes these groups becomes diagnostically helpful; specifically from their demographic, cultural, social and familial characteristics and attitudes. In addition, if early historical clues are uncovered which result from dependence on alcohol, these may provide appropriate diagnostic information. Then to focus on risk factors and historical markers in alcoholism is important; though their presence does not establish the diagnosis, they should alert a physician that significant disease may be imminent. If the expectations of the medical profession include an earlier diagnosis of alcoholism, these historical danger signals must be uncovered. To await notable physical or laboratory abnormalities is to allow the disorder too strong a hold—one that may be irreversible.

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Exercise as Respiratory Therapy

THERE WAS A TREND (I hope it has been reversed) to tell patients with chronic respiratory disease to take it easy. . . . Respiratory cripples give up too soon, become inactive, become depressed, lose their self-image; and a tremendous vicious cycle is begun. They do this sometimes in the mistaken belief that if they simply do not strain their lungs and their hearts they will live longer. Then they really deteriorate and participate in their own downhill slide.

There is no question that you can train people with respiratory insufficiency to exercise more and be more comfortable. The mere act of exercise is not that important; what is important is translating this improved capability into activities of daily living. How that is translated into the patient's own life-style varies tremendously. But I have patients today who have continued to exercise and walk miles a day, after being housebound, because they love it. On the other hand, I have patients for whom exercise does not have much meaning. It is possible to train people; they can become more efficient physically and if this is useful for patients, then it is highly worthwhile.

—THOMAS L. PETTY, MD, *Denver*

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